



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

HISTORICAL CHANGES IN THE MONETARY STANDARD.

I ENDEAVORED, in this JOURNAL of December last,¹ to sketch the main characteristics of the transition from the silver standard to the gold in England in the Eighteenth Century. It may be of interest, perhaps, further to enquire whether this transition stands alone as something unique and unprecedented, or whether it has traceable characteristics in common with others of the historical changes of the monetary standard in the world. With that end in view, it will be desirable to indicate what features of the English transition are those that appear to be the truly salient ones.

The one great outstanding fact in connection with it was its unconscious character. It had become actually an accomplished fact before anyone recognized that anything in the nature of a transition had taken place. Lord Liverpool's strongest point in defense of the measures, the adoption of which he advocated in 1805, and which were ultimately adopted by the legislation of 1816, was that they altered nothing, that, on the contrary, they legalized in every respect the state of things which *de facto* at the time existed. Practically, there had been no free coinage of silver for nearly a century; he proposed that the statutory possibility of such free coinage should cease; the silver coin in circulation had been protected from the risk of being exported by the fact that the natural process of attrition by use had made it so light that it did not pay to export it; he proposed that, in the issue of fresh silver, this natural process should be artificially imitated, that the weight of the new silver coins, from the start, should be something below that which represented their bullion value; the mint price of gold had long remained steady at £3 17s 10½d per oz., and the foreign exchanges had for many years been altogether unaffected by the state of the silver coinage; it was, in Lord Liverpool's eyes, the one great recommendation of his proposals that, as he anticipated, once they were adopted, this desirable state of things would be stereotyped. All through, nothing was altered, everything was continued. It was a genuine stroke of genius, none the less, to have grasped aright the true character of existing facts, and to have shown how the statutory law could be brought into conformity with them.

¹“The transition to gold in England and in India.”

This fact, that a change in the monetary standard of the country, while it was actually in process of accomplishment under their eyes, could have escaped the recognition of contemporary observers seems, at first sight, to be one of so marvelous a character as to pass the bounds of belief. Yet that it was a fact is beyond all question. Harris, for instance, wrote in 1757. In his day the whole state of things which the legislation of 1816 found in existence and stereotyped had already come into existence. By his own account the foreign exchanges had altogether ceased to be affected by the state of the silver coinage. He, however, stoutly maintained that gold, in England, was then only a commodity, and that silver was the sole, true, and, indeed, the sole possible measure of values in the country. Wages were paid, he urged, mainly in silver, and "enact what laws you please," he said, "that which measures and pays the price of labor will ultimately be the real standard of the nation."

The view taken of the matter by Adam Smith is a subject of still greater interest. It is of great interest alike for what he saw and for what he failed to see. He perceived in substance, indeed, and came very near to stating with perfect accuracy of form, the true relation which the silver coinage bore to the gold in his day. He saw that the gold, not the silver, was even then the *regulative* element in the coinage. When we find him putting forward and laying stress upon the fact that the value of the existing "worn and depreciated silver coin was regulated by the value of the excellent gold coin, for which it could be changed;" that the then recent reformation of the gold coin had raised not only its own value, but "likewise that of the silver;" it strikes us that he seems to perceive clearly enough that the shillings of his day were in truth to be looked on merely as fractional parts of the guinea, just as the shillings of our own are to be regarded as merely fractional parts of the sovereign. We expect, indeed, to find him going on to the formal conclusion that the gold was plainly the standard money, and the silver, like the copper, merely fractional and subsidiary. That, however, he does not do. On the contrary, he is impressed with the idea that it is silver which is still the standard, the true measure of all values. Dealing with the subject generally, he remarks, that the commercial nations have ordinarily found it convenient to use different metals coincidentally as money. One of these metals they have always considered as more peculiarly the measure of values than any of the others, and this preference, he says, "seems

generally to have been given to the metal which they happen first to make use of as the instrument of commerce." Copper thus, he appears to think, remained to the end the standard money in Rome, and silver, up to his own day, had remained the standard money in England. In England, he observed, "all accounts are kept and the value of all goods and all estates is generally computed in silver; and when we mean to express the amount of a person's fortune we seldom mention the amount of guineas, but the amount of pounds sterling which we suppose would be given for it."

With regard to this line of reasoning what will strike the most casual reader will be that if the fact that all computations were made in pounds sterling in Adam Smith's day could be taken as sufficient proof that silver was, at that date, the standard money of the country, then, on the same ground, we should be forced to the conclusion that silver is the standard money of England now. We all know now, however, that the words "pound sterling" have entirely lost, even in popular thought, their application to silver, and have become merely a synonym for the full-weighted sovereign. We have the key, I think, to the unconscious character of the English transition, as well as to the manner in which other of the historical transitions of the monetary standard in the world have effected themselves in the fact that this change of application in these words from silver to gold had already taken place in the Eighteenth Century, unperceived by its clearest-headed observers. As Lord Liverpool remarks, in his time the words "pound sterling" no longer meant 1718.7 grains of fine silver, but, instead, 113 grains of fine gold. In order to assure ourselves that the change of meaning was complete in Adam Smith's time, we do not need to go beyond his own pages. In addition to the proofs already adduced we may take the simple fact of his stating as the result of a computation that the "an ounce of gold coin is worth £3 7s 10½d *in silver.*" It is plain that if the computation had really taken account of the contemporary value of silver bullion, the ounce of gold would not have been found to be worth precisely this, its present mint price. It is only because the computation is made in gold, the silver being regarded as bearing a constant fractional relation to the gold, that the ounce can be held to be worth £3 7s 10½d. We could not have a clearer proof that to Adam Smith himself the words pound sterling had reference no longer to silver but to gold.

In inquiring how such an unperceived transition of meaning in

such words could come about it is worth while to draw attention to the wide difference that exists between the true character of the nomenclature of economics and that of the physical sciences. The things of the outward world depend, in the long run, for their identification and, consequently, for their names, on the fact that we can lay our fingers upon them, or, at any rate, can point them out. If we wish to explain to our neighbor what gold, or lead, or iron is, we have the plain resource of an object lesson always open to us. With the things of economics, as of the purely subjective sciences, the case is altogether different. Before we can identify and name them we must know what is the purpose for which human beings intend to employ them. The things of physics take their names from their shape, their color, their weight and so on. The things of economics take their names from the human aims that they subserve. Nothing is more common in economical discussions than to find this elementary fact lost sight of. We have endless discussions, for instance, as to what capital is, which, all through, assume that capital is something that can always be identified by pointing it out, like wood or iron, without any knowledge being presupposed as to what its owners mean to do with it. A truer conception, however, in this case, is, perhaps, gradually forcing its way to general acceptation. Professor Marshall, for instance, remarks that a doctor's carriage is capital in the forenoon when he is using it to visit his patients, and not capital in the afternoon when he is driving about in it with his family for his own and their amusement. If that holds good, evidently its physical characteristics have to be left very much out of account in its economical classification. Mill's definition of capital, which amounts to this, that it is wealth used or intended to be used for the production of fresh wealth, recognizes the same principle. Before we know whether anything is capital or not we must know what its owner means to do with it, and, once we know that, such questions as, what it looks like, or what it weighs, become matters of indifference, and even cease altogether to be taken account of. The history of money in all its varieties and in every age teems with instances illustrative of this principle. Some of them, indeed, are curiously enough paradoxical. When we hear of a coin named the "Siliqua *auri*" we should probably conclude that it was, at any rate, gold coin of some sort or other.¹ It was, however, it seems, on the contrary, a silver coin

¹ MOMMSEN (BLACAS), *Histoire de la monnaie romaine*, vol. iii. p. 83.

which represented the $\frac{1}{24}$ part of the gold solidus.¹ Similarly, in the Egypt of the Ptolemies, we have a coin which is commonly described as the copper *argenteus*, a large copper, that is to say, which was the equivalent in value of the Attic obolus.² In the early Sicilian coinage again we have the silver and copper *litras*, both of which, strangely enough, were of the same metal but of different weights and values. Turning to the infancy of commerce, when we find values stated in terms of bullocks, slaves, or caldrons, it is almost always a question, and often a strenuously debated one, whether it is actual bullocks, slaves, or caldrons that the author or the inscription quoted allude to, or whether, on the contrary, it is the value of a coin or ingot of gold, silver, or copper that had become the equivalent in value of the slave, the bullock, or the caldron that is meant. With regard, for instance, to the oxen in which the value of the armor of Glaucus and Diomed is estimated in the Iliad the better opinion, I think, is that it was not actual oxen but gold ingots with which the value of the ox had become equated and which thus, as in so many parallel instances, took the name of "oxen," that Homer had in his mind. It is inconceivable, indeed, that actual oxen could have circulated as money among the soldiers of a besieging army. The expression seems to be a survival from a state of things not then existent. The early Attic proverb that ran to the effect that when a man's silence had been purchased, "an ox had passed over his tongue," as Pollux and Plutarch tell us, refers to a coin or ingot that had become known as an "ox," not to the actual animal itself.³

Lenormant urges in opposition to this view that no such coin as a *bous* is known, and that no coins at all had been issued at the early period when the proverb originated. If the *bous*, however, were not a coin, there is no reason why it should not have been an ingot of a given weight, originally the equivalent in value of the ox. The shekels that Abraham paid for the cave of Macpelah were not coins, but ingots, as were the pieces of silver paid for the threshing floor of Ornan the Jebusite, and the pieces of silver which Job's friends brought and presented to him, which, curiously enough, the Septuagint translates as *amnada*, lambs.

Professor Ridgeway, in his very suggestive work on the *Origin of*

¹ BABELON, *Les origines de la monnaie*, p. 385.

² MOMMSEN (BLACAS), *Historie de la monnaie romaine*, vol. i. p. 104.

³ See RIDGEWAY, *Origin of Currency and Weight Standards*, p. 4.

Currency and Weight Standards, expends a great amount of learning and of dialectic skill in the attempt to prove the proposition that, over the whole known world, from the Euphrates to the Bay of Biscay, and over a period of many centuries, the ox bore a constant relation of closely approximate equivalence in value to the gold weight or gold piece of 130 to 135 grs. When we know that an ox which is worth, perhaps something under £2 on the plains of Texas now, is worth nearer £10 in New York, it is hard to believe that the valuation of cattle in metal or metallic money in the ancient world effected itself on principles so amazingly different from those which it follows in the modern world. In the neighborhood of Nineveh or Babylon there can be no doubt that the ox must have been worth many times the amount in gold that it was worth on the steppes of Scythia. It is not, however, in the least necessary for the support of Professor Ridgeway's more general view as to the original connection between the value of the ox and the coins which he describes as "ox-units" that so incredible a proposition should be sustained. He himself, indeed, recognizes that it is not so. Skins of animals, as he remarks, became, early in the present century, the unit of account in the Hudson Bay Territory in dealings between the Indians and the traders, as they did in earlier periods in Estonia, in Lapland, and in many other parts of the world. The beaver skin, when the traders went there, in the first instance, was worth two English shillings. Subsequently its value rose to many times that figure. A denomination of value, however, still remained in existence that did not follow the fluctuations of the actual beaver skin. It may be called the beaver skin of account. It was nothing else but a synonym for two shillings. A beaver skin in the flesh might thus be sold for ten to twenty beaver skins of account. The transition of standard from skins to metallic money had, in short, been effected in precisely the same manner as the transition from gold to silver had been effected in England in the eighteenth century. The words "beaver skin," more or less unconsciously to the Indian users of them, had changed their application from furs to silver, just as the words "pound sterling," in the eighteenth century, changed their application from a given weight of silver to a given weight of gold; and the change, in both instances, had arisen from causes that were, in their nature, the same.

M. Babelon,¹ the eminent French numismatist, thus sketches the

¹ *Les origines de la monnaie*, p. 230.

course of gradual and progressive transition followed by the monetary standard throughout the Hellenic world and in ancient Italy: "After barter, pure and simple, came cattle money, then utensil money, then iron, copper, gold, and silver, estimated by weight, then copper and iron *money*. Finally we see copper and iron money giving place to money of silver and gold." Of these transitions none but the last—and that, indeed, in Italy alone—fall within the historical period. Thanks to the fact that the history of Roman money has been dealt with by a man of genius of the first rank, it is possible for us to follow the course of transition from copper to silver in Rome in the third century B. C., as well as the course of the subsequent transition from silver to gold during the empire with a degree of intelligent comprehension greater than that with which we can follow any other change of standard in the world up to the last great change, which has been gradually accomplishing itself among us during the last two centuries.

Amid much that is disputed in connection with the first of these transitions it is well, perhaps, to set down what there is that is clear and definite beyond all possibility of controversy. There is, in the first instance, the bare fact of the transition. It is beyond all question that, up to the beginning of the third century, B. C., copper had been for some hundreds of years the standard of values in Latium and throughout Italy. Their very word for "to value" was *aestimare*. Their treasury was known as the *aerarium*. During the latter part of the period, no doubt, the silver of Magna Grecia, of Sicily, and of Etruria circulated more or less in Rome, though it is remarkable that very little of it has ever been found there. Copper formed, at any rate, the great bulk of the circulation. Penalties were fixed, taxes were imposed, and all accounts were kept in copper. If we come to the time of Sylla, again we reach a period when copper had ceased to exist as any part even of the subsidiary circulation, and when there was not an ounce of copper in the treasury, though it still retained the name of the *aerarium*. Such a fact, it is plain, is quite irreconcilable with Adam Smith's view that copper remained, in any sense, the monetary standard in Rome to the close of its history. All that did remain in Sylla's day and after it was a terminology derived originally, no doubt, from the use of copper, but which, by that date, had long become applicable to silver only, except, indeed, in as far as it was applicable to gold. In the Greek world, too, where copper had been ousted as money before the historical period began, the obol and the drachma,

nevertheless, remained as terms "borrowed from an ancient copper system."¹

About 268 B. C. it was that silver was first coined in Rome, and, at about the same time, what is called the first reduction of the as took place. The amount of this reduction, its causes, and its consequences, are all still, more or less, in controversy. We shall probably not go far wrong in following, in the main, Mommsen's account of it.² He regards the two events, the issue of silver and the reduction of the as, as part of the same operation, and does not look upon the latter as anything in the nature of an act of bankruptcy. What is certain is that, before 268 B. C., the word "as" was the name for a copper ingot, and afterwards for a copper coin, a little under one pound in weight, and the equivalent of one pound of raw copper in value, which was the universal unit of account in all computations; and that, after 268 B. C., it was made the name for a coin of, at first, four ounces, and, afterwards, much less in weight. In such circumstances it was, perhaps, natural to suppose, as Pliny does, that even the first reduction was made, with the view of paying off national creditors with the equivalent of six and eight pence in the pound. The remarkable fact, however, is—and it is one that appears to be quite irreconcilable with such a view—that, though the old *as libralis* ceased to exist as coined money, it remained in continual use as money of account. There were thus, in a sense, two ases contemporaneously in existence, the libral or one pound, and the triental or four ounce, as; and as so many of the one must have been exchanged every day for so many of the other, it seems impossible that the last can have to be regarded as a reduction of the first, in the sense, say, that the pound sterling of Edward VI was a reduction of the pound sterling of Henry VIII. How so confusing a terminology ever came to be resorted to, I think, has not been satisfactorily explained. It is remarkable, however, that it had its prototype in Sicily, where there were two litras contemporaneously in existence, the heavy and the light, the first bearing about the same relation to the second that the *as libralis* did to the triens. The Roman monetary system, indeed, is manifestly throughout modeled on the Sicilian, and it appears to have adopted this feature of it with the rest.

The *as libralis* then, as a coin, was done away with before the triens, or four ounce as, was used. Mommsen, however, as observed above,

¹ RIDGEWAY, *Origin of Currency and Weight Standards*, p. 346.

² MOMMSEN, *Histoire de la monnaie romaine*, vol ii. pp. 67 ff.

has established beyond all doubt the fact that, though it ceased to exist as a copper coin, it remained in existence as money of account, and has further established the fact that, even as a coin, it immediately came into being again, in silver, under the name of the sestertius or nummus. The diabol of Tarentum, weighing about a scruple of silver, had, apparently, in the course of commercial transactions, equated itself in value with the pound of copper,¹ just as the beaver skin of Hudson Bay equated itself temporarily with two English shillings, or the pound sterling, in the eighteenth century, equated itself, for a time, with 113 grains of fine gold. Accordingly a coin weighing a scruple was issued in Rome, and was called the *nummus* (from *vómos*) on account of its equivalence with the old standard of account, the *as libralis*. For the moment the money of Rome was bimetallic. Every transition of the standard, indeed, implies necessarily a bimetallic period of shorter or longer duration. "Thus," says Mommsen, "fines for injuries which the law of the Twelve Tables fixed at 25, 150, or 300 ases, were payable in so many sesterces, precisely, indeed, as fines fixed by the old English law in so many pounds sterling of silver are payable now in so many sovereigns.² "What is certain," he observes elsewhere, "is that the *as libralis* was retained as money of account, and that it survived, long after its suppression, in the sesterce or nummus of silver, which had the same value; only in keeping accounts care was taken to add the words *aeris gravis* to distinguish the old *as* from the new. Indeed, there was no difference between the silver nummus, weighing two and a half new ases of four ounces each, and the old *as*, which weighed ten ounces." We could not, it will be seen, have a closer parallel to the English transition. The copper *as libralis* survived in the silver sesterce, precisely as the pound sterling in silver survived in the gold sovereign.³

The parallel presented by the two transitions is worthy of notice in some other of its aspects. We know that after the mint edict of 1717 in England, by which the guinea was fixed at twenty-one shillings, what happened to the silver coinage was that, without foresight or conscious intention on the part of anyone, it became of its own accord a subsidiary money, circulating as such alongside of the gold; and that it went on thus circulating for the best part of a century, until, indeed,

¹ *Op. cit.*, vol. i. p. 256.

² *Op. cit.*, vol. ii. p. 31.

³ *Op. cit.*, vol. ii. p. 16.

the act of 1816 ratified and continued the state of things already in existence. In the more modern changes of standard in Europe, the adoption of silver as token money has been something that was done consciously and of set purpose from the first. We have come thus to think of the establishment of a subsidiary coinage as a change that always is effected by the conscious act of the central authority. It is an unwonted conception to think of money which has been the principal measure of values becoming of itself subsidiary. It will be of interest, therefore, to observe how the phenomenon, as presented in Rome, appears to the eyes of the German historian. His account of the subsidence of copper into token money is given somewhat as follows :

After the first reduction of the as, copper still retained its intrinsic value in the monetary circulation. Before the reduction the ratio between the two metals had been 1 : 250, and so it remained, both in the coinage and in the outside market, immediately after it. The copper *decussis*, weighing and worth ten of the triental ases, was the equivalent both nominally and intrinsically of the silver *denarius*, which was also rated at ten of them.¹ For a short time, thus, it was not possible to say that silver was the standard more than copper, or copper more than silver. The bimetallic period, however, was not of long duration. It is interesting to observe what happened next. The underlying cause which had led the Roman state to issue silver was to be found in the fact that silver had already become the money of its wholesale trade. The denarius was modeled on the drachma, the great unit of account in the Hellenic world. It was in denarii and drachmas, or in some other form of silver, that what we would now call the international balances were settled. The ases, therefore, so long as they were exchangeable in fixed proportion for denarii, served perfectly well the purpose of the internal circulation, no matter what their weight might happen to be. It soon appeared, accordingly, that neither debtor nor creditor gave themselves any concern in regard to the question of the weight of the copper coinage, and a process of degradation at once set in. From four ounces the as presently fell to three, then to two, then to one, and on even to fractions of the ounce. The utmost carelessness, too, was soon observable in regard to the relative weights of the various pieces. In the uncial series, as it is called, that is to say, the series issued when the weight of the as was at one ounce,

¹ *Op. cit.*, vol. ii. p. 38.

pieces which, in value, were reckoned as the third or the quarter of the as are, now and then, found to be heavier than the *semis* or half-as piece. The number of the globules marking the value is alone of importance. The size of the coin, as Mommsen remarks, had come evidently to be looked upon as of no more moment, with regard to the determination of its value, than would be, with us, the special size of a bank note. All through his account of the transition, it is noticeable that he speaks of the copper money as "becoming" subsidiary, and of the silver as "taking its place" as the principal money, treating the process as one of purely natural evolution.

Before passing on to the second transition it may be worth while to notice some further developments in connection with the first. The Roman state no doubt made a large saving in copper during the successive reductions of the as from four ounces to one. The saving, however, was not necessarily illegitimate, any more than is the profit that Great Britain makes annually on the issue of her token silver. We must take care, at the same time, not to transport our modern point of view, without reservation, into the ancient world. It can hardly be said that the underlying principle of the distinction between reductions in the weight of the subsidiary money, which are innocent and often necessary, and reductions in the weight of the principal money, which are among the most dangerous of public crimes, is adequately understood even at the present day, still less was it understood in the ancient world. With the ancients all the monetary metals were *ipsae opes*, and the reduction in the weight of one sort of money no doubt seemed to them very much the same kind of operation as the reduction in the weight of any other. We find thus that the same confusion of thought which has generated free silverism in the United States appears to have generated a movement of a closely similar character in ancient Rome.

After the reduction of the copper had been an existing fact for upward of a hundred years without anyone apparently being much the worse for it there supervened a period when democratic sentiment in the republic reached its high-water mark. The unit of account up to that date had never been altered. It had been from the first and still was the *as libralis*, represented in silver by the sesterce, or rather practically by its multiple the denarius, that coin being worth four of the libral ases or ten of the coined ases of 268 B. C. The aim of the new movement was to alter the unit of account. The coined as of the

later date weighed only a fractional part of the coined as of the earlier. It was still, however, the as, and, in some sense, in the eyes of the Roman popular party, no doubt it was "the as of their fathers." A proposal accordingly came to be put forward in favor of enacting that all debts for the future should be payable not in ases of the earlier date or their silver equivalent, but in ases of the later date or their intrinsic equivalent. It took shape finally in the Lex Valeria, of 86 B. C.,¹ which thus substituted the second as for the first. Sallust remarks of the measure, "*Argentum aere solutum est.*" One cannot fail to be struck by its similarity to the proposal for paying gold debts in silver. The questors affixed to the temple of Castor a tabulated statement showing the reduction of debts due effected by the new enactment. It amounted to no less than 75 per cent., and to this the public were authorized to conform their payments, and did, as a matter of fact, conform them while the law remained in force. The change, however, was too violent and too arbitrary to last. Sylla repealed the Lex Valeria and re-established the original method of computation.

The undisputed reign of silver as the standard money in Rome was of short duration. The period of bimetallism that rendered possible the transition from copper to silver had hardly ended before a second period of bimetallism began, which prepared the way for the second transition, that from silver to gold. Very little gold money, indeed, was struck during the republican period, and what there was was struck not in Rome but by the generals on campaign, in virtue of their *imperium militare*. Gold, for all that, was not without its importance in the monetary circulation, taking that expression in its wider sense. It was already largely in circulation in the shape of ingots, which probably, though not certainly, bore the stamp of the state guaranteeing their purity. Their purity was, at any rate, a matter of concern to the authorities, as evidenced by a law of Sylla,² which ordained the punishment of the adulterators of the gold ingots with the same severity as the coiners of false silver money. A legal ratio, too, must have been fixed between the two metals, as it was at an early date provided that 5 per cent. of the tax on enfranchisements was to be paid in gold, and as the generals, in sending for gold, ordinarily named the amount required in sesterces. In the first and second centuries before Christ, from four fifths to one half of the treasure in the

¹ *Op. cit.*, vol. ii. p. 74. See also footnote.

² *Op. cit.*, vol. ii. p. 108 *et seq.*

aerarium consisted of gold. Even earlier than Cæsar's day, thus, there is reason to believe that gold had already supplanted silver, to a large extent, as the money of wholesale trade and large operations generally.

The value of gold, as measured in silver, in the early days of the Republic ranged as high as 1 : 17.¹ The discovery of the mines of Noricum about 150 B. C. caused, we are told, a fall in its price of one third, in the Roman market. Shortly after that date, the pound of gold was worth 4000 sesterces, the ratio thus being 1 : 11.91. After Cæsar had brought to Rome the rich spoils of Gaul the pound of gold fell to 3000 sesterces, showing a market ratio, thus, of 1 : 8.93. When, however, Cæsar commenced the regular issue of the aureus, the ratio of 1 : 11.91 was maintained in the coinage and was subsequently continued under Augustus. This fact must be taken into account in connection with the immense issue of gold in the early days of the empire, as abundantly evidenced by the discovery of buried hoards. In the treasure of Brescello alone were discovered 80,000 gold pieces, all struck between the years 46 and 38 B. C.

The phenomenon of this great issue of gold is one apparently of a similar character to the large issue which succeeded the fixing of the ratio in England in 1717, or the more recent phenomenon of the great issue in bimetallic France which succeeded the Californian and Australian gold discoveries of the fifties. Such phenomena are commonly spoken of as instances of the operation of Gresham's Law. Assuredly, however, they are phenomena of a very different character from the supplanting of good money by base coin or over issued paper. In the latter case, industry and commerce are thrown into confusion, and the reform of the coinage becomes, sooner or later, the subject of an urgent popular demand. In the former case, on the contrary, as was found by the experience both of England and of France, there is nothing but general congratulations at the change. So far as it is possible to judge, the same was the case in Rome in the era of Augustus. Gold had already become the most important medium of wholesale trade. Its new abundance made it now also the great medium of the internal circulation, and relegated silver to the second place.

In this second Roman transition, again, the characteristic remarked on above both in connection with the first Roman transition and with regard to the English transition of the last century, viz. the retention of the old terminology, made, more or less unconsciously, applicable

¹ *Op. cit.* ii. 112 *et seq.*

to the new standard, is observable. Mommsen himself, indeed, is struck by the English parallel. "Accounts continued" he says "to be kept regularly in denarii and in sesterces, just as accounts are kept at the present day in England in pounds and shillings of silver ; but these denominations of value were no longer represented by a fixed quantity of silver, but by the quantity of gold that corresponds to it. So the denarius signified less a denarius of silver than $\frac{1}{25}$ of the aureus."¹

After the change, too, we find the silver money following the same course which, in the earlier period, had been followed by the copper. Up to the time of Nero the denarius was found to contain 99 per cent. of pure silver. A process of depreciation then began.² The denarii of the latter part of his reign contain from 5 to 10 per cent. of alloy. Under Trajan and the Antonines, the golden age, it must be remembered, of the empire, the proportion of alloy rises markedly to something between 20 and 25 per cent. Under Severus, again, the silver has become mere billon money, consisting, by at least half, of copper. The underlying reason of this depreciation is no doubt to be found in the fact that gold had now definitely taken its position as the principal measure of values, and that, consequently, the intrinsic value of the silver coinage had come to be, to a great extent, a matter of indifference to the general public, so long as it continued to be exchangeable for gold in fixed proportions. The depreciation, at any rate, was consistent with a high degree of national prosperity. It caused no tumult, and, apparently, attracted very little notice.

Again, however, it must be said, we have to be on our guard against transporting our nineteenth century point of view into the ancient world. Since Lord Liverpool's day we have formed the conception of subsidiary money as distinguished from the principal measure of values ; and we know that the former may, to a great extent, lose its intrinsic value without injury to the public, so long as its value in the coinage is maintained by the limitation of its quantity. The Roman world, however, had hardly begun to formulate its knowledge on the subject.³ It is not a matter of surprise, therefore, that the depreciation of the denarius, now become subsidiary, which under the Antonines was innocuous, when accompanied with unlimited issues by Caracalla and

¹ *Op. cit.*, vol. iii. p. 45.

² *Op. cit.*, vol. iii. p. 29.

³ Paulus certainly speaks of the value of copper as being dependent on its quantity not on its material.

his successors, led up to the great crisis of the third century, which was the main factor in producing the political anarchy that then prevailed for more than a generation. When, again, monetary reform was undertaken and carried out by the strong hands of Aurelian and Diocletian there was no thought, it need hardly be said, of reform on anything like Lord Liverpool's lines. The only conception of monetary reform indeed that prevailed in the ancient world, and throughout the middle ages, was a return to the coining of the metals at their market ratio. There was always thus before the mind of the Roman reformer the endless quest of bimetallism, and the remedy was of course, at the best, never more than a temporary one. The later years of the empire, indeed, are marked by the reassertion by gold of its position as the only real money of the epoch more definitely than ever, and, curiously enough, the metal which, in the days of St. Augustine, attempts to share that position with it is now no longer silver but copper.¹ Space, however, will not permit of further details at present.

WILLIAM WARRAND CARLILE.

LARGS, SCOTLAND.

¹ *Op. cit.*, vol. iii. pp. 163, 170.